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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/697,025	10/26/2000	Mehrdad Nikoonahad	TNCR.183US0	3437

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EXAMINER

SMITH, ZANDRA V

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 03/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No.	Applicant(s)	
	09/697,025	NIKOONAHAD ET AL.	
	Examiner	Art Unit	
	Zandra V. Smith	2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12, 14-17, 19-33, 35-60, 62, 63 and 144-175 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12, 14-17, 19-33, 35-47, 51-60, 62, 63 and 144-175 is/are allowed.
- 6) ☒ Claim(s) 48-50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>18 October 2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 48-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 48 and 49, the phrase "less than about" renders the scope of claim indefinite because it is not possible to ascertain the limits. Claim 50 is included for its dependence on claim 49.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Nose et al.* (5,751,426) in view of *Aziz et al.* (US 6,556,305 B1).

As to **claim 48**, Nose'426 discloses a positional deviation-measuring device and method for measuring the positional deviation between a plurality of diffraction gratings formed on the same object, comprising;

a laser light source (3) providing radiation to illuminate two periodic patterns (2a, 2b) simultaneously;

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a detector and optics collecting radiation from the patterns to form an image of at least a portion of the two patterns in a two dimensional array detector (CCD), and

a processor determining misalignment between the structures from outputs of the detectors (col. 8, lines 20-55 and col. 11, line 62-col. 12, line 2). Nose'426 differs from the claimed invention in that the integration time of the detector is not provided; however to do so is well known as taught by Aziz. Aziz discloses a pulsed source scanning interferometer that includes controlling the integration time of a detector in a measurement system (col. 2, lines 52-65). Although Aziz fails to give the specific integration time, it would have been obvious to one having ordinary skill in the art at the time of invention to have an integration time of 10 milliseconds to prevent blurring of the image.

Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Nose et al.* (5,751,426) in view of *Nose et al.* (5,130,554)

As to **claim 49**, Nose'426 discloses a positional deviation measuring device and method for measuring the positional deviation between a plurality of diffraction gratings formed on the same object, comprising;

a laser light source (3) providing radiation to illuminate two periodic patterns (2a, 2b) simultaneously;

a detector and optics collecting radiation from the patterns to form an image of at least a portion of the two patterns in a two dimensional array detector (CCD), and

a processor determining misalignment between the structures from outputs of the detectors (col. 8, lines 20-55 and col. 11, line 62-col. 12, line 2). Nose'426 differs from the claimed invention in that the pulse width of the light source is not provided however to do so is

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well known as taught by Nose'554. Nose'554 discloses a two-dimensional scanning device for detecting position between two relatively movable objects that includes a pulse width of about 10 milliseconds (col. 9, lines 35-45). It would have been obvious to one having ordinary skill in the art at the time of invention to include a pulse width of about 10 milliseconds to correspond to the sizes of the regions on the surface of the object and to ensure proper focus.

Allowable Subject Matter

Claims 1-12, 14-17, 19-33, 35-47, 51-60, 62-63, and 144-175 are allowed.

Claim 50 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious collecting radiation from the two structures and directing the collected radiation to form images of at least portions of the two structures on an array of detectors, wherein the image of the portions of one of the two structures is substantially distinct from the image of the portions of the remaining one of the two structures, optics at different at different distances from the two structures, and a mechanical shutter, in combination with the rest of the limitations of claim.

Fax/Telephone Information

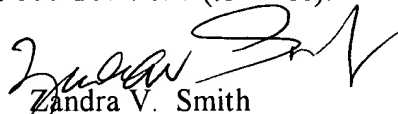
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (571) 272-2429.

The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley Jr. can be reached on (571) 272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Zandra V. Smith
Primary Examiner
Art Unit 2877

March 5, 2005